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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,180	11/26/2003	Jong Chul Bang	K-0585	6620

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EXAMINER	
PERRIN, JOSEPH L	

ART UNIT	PAPER NUMBER
1746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,180	BANG, JONG CHUL	
	Examiner	Art Unit	
	Joseph L. Perrin, Ph.D.	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 July 2007 & 15 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 21-36, in the reply filed on 9 July 2007 is acknowledged. The traversal is on the ground(s) that the claims, as amended, are not restrictable. Applicant's arguments are persuasive and the restriction is withdrawn. Claims 21-51 will be examined on the merits.

2. The Examiner notes that the submission of restrictable claim sets and amending the claims upon restriction in order overcome the restriction are not in the best interest of compact prosecution. In the future, applicant is strongly urged to carefully review claim sets prior to submission to prevent such avoidable delays in prosecution.

Response to Arguments

3. Applicant's arguments filed 15 March 2007 have been fully considered but they are not persuasive.

4. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant's arguments describe the intended use of the apparatus but fail to point out how the structural limitations of the claimed apparatus patentably distinguishes them form the references, and no claimed structural limitations which patentably distinguish from the prior art are readily apparent.

5. Turning to the rejection(s) of the claims under 35 U.S.C. § 102, it is noted that the terminology in a pending application's claims is to be given its broadest reasonable interpretation (*In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)) and limitations from a pending application's specification will not be read into the claims *(Sjolund v. Musland,* 847 F.2d 1573, 1581-82, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988)). Anticipation under 35 U.S.C. § 102 is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of a claimed invention. See *Constant v. Advanced Micro-Devices. Inc.*, 848 F.2d 1560, 1570, 7 USPQ2d 1057, 1064 (Fed. Cir.), cert. denied, 488 U.S. 892 (1988); *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). Moreover, anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or the recognition of properties that are inherently possessed by the prior art reference. *Verdegaal Brothers Inc. v. Union Oil co. of California*, 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir. 1987), cert. denied, 484 U.S. 827 (1987). A prior art reference anticipates the subject matter of a claim when that reference discloses each and every element set forth in the claim *(In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) and *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990)); however, the law of anticipation does not require that the reference teach what Applicant is claiming, but only that the claims "read on" something disclosed in the reference. *Kalman v. Kimberly-Clark Corp.,* 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984) (and overruled in part on another

issue), *SRI Intel v. Matsushita Elec. Corp. Of Am.*, 775 F.2d 1107, 1118, 227 USPQ 577, 583 (Fed. Cir. 1985). Also, a reference anticipates a claim if it discloses the claimed invention such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention. See *In re Graves,* 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995); cert. denied, 116 S.Ct. 1362 (1996), quoting from *In re LeGrice,* 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962).

Regarding ABE, applicant argues that ABE does not disclose the claimed coils which "are configured to convert electrical energy generated ... to thereby dissipate the generated electrical energy". This is not persuasive because applicant's arguments are directed to the intended use of the claimed structure and it is unclear how the "configured" coils differ in structure with those of ABE. It is fundamental that an apparatus claim defines the structure of the invention and not how the structure is used in a process. *Ex parte Masham*, 2 USPQ2d 1647, 1648 (BPAI 1987). See also *In re Yanush*, 477 F.2d 958, 959, 177 USPQ 705,706 (CCPA 1973); *In re Finsterwalder*, 436 F.2d 1028, 1032, 168 USPQ 530, 534 (CCPA 1971); *In re Casey*, 370 F.2d 576, 580, 152 USPQ 235,238 (CCPA 1967). As long as the apparatus of ABE is capable of convert electrical energy to thermal energy (inherent property of a resistance coil), the prior art apparatus meet the requirements of the claimed feature. Applicant has not established on this record any structural distinction between the coils within the scope of the rejected claims and the coils fairly described by ABE, and no such structural distinction is apparent.

Applicant further argues that the electromagnet of ABE does not read on the claimed "case" because "Abe neither discloses nor suggests that any poprtion of the electromagnet 16 defines an interior space. The Examiner submits that applicant fails to recognize the level of ordinary skill in the art. It appears applicant has taken the position that since the drawings are two-dimensional that the structure disclosed must be two-dimensional. The Examiner emphatically disagrees and maintains the position that the electromagnet of ABE, which unequivocally surrounds and houses the terminals and coils, reads on a broad recitation of a "case" which serves the purpose of housing the structure. Following applicant's logic would suggest that the structure in ABE is nothing more than two-dimensional, which is clearly not the case as would be readily understood by one having ordinary skill in the art. Moreover, even if *arguendo* one were to consider the apparatus of ABE as not reading on the broad recitation of a "case", it is not clear how simply providing a "case" around the disclosed coil and terminal structures would result in a patentable modification since it is common knowledge that "case" structures would yield the predictable results of providing housing to other structures. The Examiner notes that SHINOBARA, while not relied upon in this rejection, provides explicit teaching that molded articles can be used to form electromagnetic coil bobbin cases thereby evidencing that such cases are known in the art.

Regarding applicant's argument that ABE does not disclose the terminals "at least partly housed within such an interior space", applicant's attention is directed to the

Figures of ABE in which it would be readily apparent that the terminals are inside the case and read on the claimed invention.

Regarding "partitions", applicant's arguments that ABE are rendered moot since ABE was not recited for the claimed partitions.

Regarding ERDMAN, TAKASHI, ISHIMARU, FEHR & SHINOHARA, applicant argues that these references do not disclose the claimed brake resistance assembly. This is not persuasive because these references are not relied upon for the teaching of the brake resistance assembly but rather ABE is relied upon. Thus, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 25-26 and 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the claims, the coil being "configured to

become inoperable" is considered new matter because the broadening of scope of the coil melting at a predetermined voltage to "configured to become inoperable" (which reads on other means of inoperability other than melting) is not within the scope of the original disclosure as filed.

8. Claims 49 & 51 recite the limitation "the first and second partitions" in lines 2-3 & "the first partition" in line 2, respectively. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 37-41, 43-46 & 51 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2000-125600 to ABE. Re claims 37-41 & 43, ABE discloses an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal (see abstract and Figures 1, 2, 3 & 5). Re claims 44-45, these claims are directed to the coils having the capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such

as that recited in ABE. Re claim 46, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and is capable of melting (i.e. configured to become inoperative) with a certain voltage. Re claim 51, the terminals are clearly mounted on a "partition" structure. Even if, *arguendo*, one were construe the electromagnet structure as not readable on a "case", the position is taken that providing a fully surrounding case structure would be well within the level and skill generally available to one having ordinary skill in the art and the use of said common knowledge case structure would yield the predictable results of housing the coils.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE. In Figure 6, ERDMAN teaches a washing machine having a cabinet, drum, motor, and brake resistance assembly including a brake coil (130) connected to an external circuit and to a terminal (see also Figure 25).

While ERDMAN discloses a coil brake resistance assembly for controlling braking of a rotary motor, ERDMAN does not expressly disclose such assembly in a case with first and second coils of differing resistance wound around first and second bobbins and connected to first and second terminals. Re claims 21 & 27-30, ABE discloses an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second terminals in the case and connected to first and second coils (17a/17b), respectively, having different diameters with different resistances and the coil ends connected to either separate terminals or a common terminal (see abstract and Figures 1, 2, 3 & 5). Re claims 22-24, these claims are directed to the coils having the capability to convert voltage into thermal energy so as to decrease voltage which is simply a property of a conventional resistance coil such as that recited in ABE. Re claims 25-26, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and is capable of melting (i.e. configured to become inoperative) with a certain voltage.

ABE teaches that it is known to provide a braking assembly for a rotary motor in an assembly comprising a case (electromagnet (16) readable on broad recitation of "case"), first and second connect terminals fixed to the case and connected to first and

second coils (17a/17b), respectively, having different diameters with different resistances in order to more effectively control a motor braking action (see abstract and Figures 1,2,3 & 5). Re claim 6, such language is directed to intended use and not afforded patentable weight, and the position is taken that any coil has a predetermined melting point and is capable of melting with a certain voltage.

Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to substitute the washing machine braking assembly of ERDMAN with the braking assembly of ABE in order to provide a rotary motor with a more effective control of a braking function in a rotary motor. Moreover, there would be a reasonable expectation of success in substituting one braking assembly for another in order to arrive at applicant's claimed invention since such substitution of known equivalents would have yielded the same predictable results.

14. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE, and further in view of FEHR. Recitation of ERDMAN & ABE are repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different

resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level of ordinary skill in the art.

15. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE, and further in view of U.S. Patent No. 4,085,395 to BILLERBECK et al. ("BILLERBECK"). Recitation of ERDMAN and ABE are repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device.

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in

combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

16. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over ERDMAN in view of ABE, and further in view of SHINOHARA. Recitation of ERDMAN & ABE is repeated here from above. While the combination at least teaches or suggest coils in an electromagnetic motor braking assembly, none of the references appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37). Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ERDMAN & ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

17. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of U.S. Patent No. 3,943,391 to FEHR. Recitation of ABE is repeated here from above. While ABE expressly teaches coils having different resistivity and expressly teaches the coils having different diameters, ABE does not expressly disclose the coil material. FEHR teaches that it is known to use aluminum or copper in coil material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use aluminum or copper in the coils to achieve different resistances due to their well known and naturally occurring different resistances since applicant has not disclosed that using copper or aluminum solves any stated problem or is for any particular purpose other than achieving different resistance from their inherent and natural properties and it appears that the invention would perform equally well with other means for achieving different resistance between two coils and the selection of any of these known equivalents (i.e. different coil diameter or different coil material) to provide different resistance between coils would be within the level and knowledge of ordinary skill in the art.

18. Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of BILLERBECK. Recitation of ABE is repeated here from above. While ABE discloses the claimed braking assembly as claimed including a casing, ABE does not disclose the casing having contours for dissipating heat. BILLERBECK teaches that it is known to provide a coil casing with contoured U-shaped channels for dissipating

coil heat (see entire document, for instance, the abstract, Figures and relative associated text).

All of the component parts are known in ABE and BILLERBECK. The only difference is the combination of "old elements" into a single device.

Thus, it would have been obvious to one having ordinary skill in the art to provide the coil case of ABE with heat dissipating channels of the coil case of BILLERBECK, since the operation of the heat dissipating channels is in no way dependent on the operation of the braking assembly, and heat dissipating channels could be used in combination with an electromagnetic coil casing to achieve the predictable results of dissipating heat from coils inside a casing.

19. Claims 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over ABE in view of SHINOHARA. Recitation of ABE is repeated here from above. While ABE discloses the claimed electromagnetic motor braking assembly as claimed, ABE does not appear to disclose using a molding material having good heat conductivity. SHINOHARA teaches that it is known that molded resins have excellent heat resistance and electrical insulation properties (see col. 19, lines 13-21) and to provide molded resins in molded articles such as "electromagnetic coil bobbin cases" (see col. 21, lines 19-37). Therefore, the position is taken that it would have been within the level and skill of one having ordinary skill in the art at the time the invention was made to supply the brake assembly of ABE with molded insulation resins as described in SHINOHARA to provide heat resistivity/insulation in order to avoid heat damage, i.e. fires. Regarding

the configuration of the partitions, coils and terminals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the internal components to achieve the same predictable result (patentability of the configuration is not clearly pointed out, see above regarding 37 CFR 1.111(b)), since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 2,411,800 to NARDONE, which teaches that it is conventional that electromagnets comprise a casing.

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

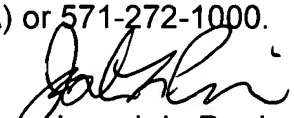
22. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joseph L. Perrin, Ph.D.
Primary Examiner
Art Unit 1746

JLP